REMARKS

The following Remarks are made in response to the Office Action mailed April 29, 2005, in which claims 1-20 were rejected. With this Response, claims 1, 9 and 17 have been amended, and claims 2, 10, and 18 have been cancelled. Claims 1, 3-9, 11-17, 19 and 20 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 103

Claims 1-4, 6, 8-12, 14, 15 and 17-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wyman (U.S. Patent Application Publication No. 2003/0112347), in view of Voss et al. (U.S. Patent Application Publication No. 2003/0147640) and Ueno et al. (U.S. Patent No. 5,436,665).

Wyman is alleged to disclose substantially the same: method for concurrently processing digital video frames and high resolution still images in burst mode, as presented in independent claim 1; joint video and still image pipeline for a video camera system, as presented in independent claim 9; and computer readable medium providing instructions for concurrently processing digital video frames and high resolution still images in burst mode, as presented in independent claim 17. In particular, Wyman is alleged to disclose substantially the same one or more image sensors (i.e., 103 of Fig. 2) capable of concurrently acquiring regular sized video frames and high resolution still image frames (referencing page 3, section [0028]); a sensor controller capable of storing the regular sized video frames and the high resolution still image frame into a memory (referencing page 3, section [0028], page 7, section [0059], and 204 of Fig. 2); one or more processors (referencing page 3, section [0028], and Fig. 2) capable of concurrently processing the reduced size video frames and high resolution still image frames acquired, wherein the reduced size video frames are processed using a video pipeline and the high resolution still image frames are processed using a high resolution still image pipeline, and wherein the high resolution still image frames are processed concurrently with the reduced size video frames, wherein the processing the high resolution still image frames includes processing the high resolution still image frames in real time (i.e., the continuous saving of video on a

motion video medium is alleged to represent real time processing of the high resolution image frames, referencing page 1, section [008]); compressing the reduced sized video frames and the high resolution still image frames (referencing page 5, section [0042]); wherein the processors are selected from a microprocessor, and application specific integrated circuit (ASIC), and a digital signal processor (i.e., 201 of Fig. 2); and down sampling the high resolution still image frames, wherein the down sampled still image frames have the same frame sizes as the up sampled video frames (i.e., the full resolution 3M pixel viewable frame is converted to a low resolution motion video frame of the same size, referencing page 3, section [0031]).

Wyman is acknowledged as failing to disclose:

(a) concurrently processing digital video frames and high resolution still images in burst mode, concurrently acquiring regular size video frames and high resolution still image frames in burst mode, and storing the regular size video frames and the high resolution still image frames acquired during the burst mode into a memory as claimed in claims 1, 9, and 17;

(b) wherein the regular sized video frames are down sampled into reduced sized video frames, the reduced sized video frames having frame sizes smaller than the regular size video frames as claimed in claims 1, 9, and 17; and

(c) upsampling the reduced video frames using motion estimation and information from the high resolution still image frames; wherein blocks in the down sampled still image frames form a block pool; and comparing blocks in the block pool with corresponding blocks in the upsampled video frames until a best match is found; and copying the best matched block into the corresponding blocks in the upsampled video frames as claimed in claims 2-4, 10-12, and 18-20.

Regarding item (a) above, Voss et al. is alleged to disclose a system and method for capturing and embedding high resolution still image data into a video data stream (referencing Figs. 1, 2a, 2b, and 4) and is alleged to teach the conventional processing and acquiring digital video frames/regular sized video frames and high resolution still image frames in burst mode, and storing the regular sized video frames and the high resolution still image frames acquired

during the burst mode into a memory (referencing page 2, sections [0022], [0024], page 3, section [0036], [0037], page 4, section [0039]). The Office Action alleges one of ordinary skill in the art, having the Wyman and Voss et al. references at hand and the general knowledge of burst mode within digital still on video cameras, would have had no difficulty in providing the burst mode features in processing and storing video frames and high resolution still images concurrently as taught by Voss et al. for the joint video and still image pipeline system of Wyman for the same well-known capturing of high resolution still images while storing the video so that both the still image and the video images are captured concurrently without losing any information as claimed.

Regarding items (b) and (c) above, Ueno et al. is alleged to disclose a motion picture coating apparatus as shown in Fig. 1, and allegedly teaches the conventional use of an upsampler 35 for upsampling reduced video frames using motion estimation (i.e., 104 of Fig. 1) and information from high resolution still image frames (referencing Fig. 4), and downsampling regular size video frames into reduced sized video frames, wherein the reduced sized frames allegedly have frame sizes smaller than the regular sized video frames (referencing column 8, lines 28-45). Ueno et al. is further alleged to show substantially the same, if not the same, comparing blocks in the block pool (i.e., as input to 35 of Fig. 1) with corresponding blocks in the upsampled video frames until a best match is found, and copying the best match block into the corresponding block in the upsampled video frames (i.e., as allegedly provided by the predictor 104 of Figs. 1 and 4). The Office Action alleges one of ordinary skill in the art, having the Wyman, Voss et al., and Ueno et al. references at hand and the general knowledge of video motion estimation, would have had no difficulty in providing the upsampling of reduced sized video frames using motion estimation and information from the high resolution still image frames, downsampling of regular sized video frames into reduced sized frames wherein the reduced sized frames have frame sizes smaller than the regular sized video frames, and block matching of upsampled video frames for providing the best match all is allegedly taught by Ueno et al. as part of the video compression process within Wyman for the same well known compression of video for band width reduction purposes as claimed.

The rejection of independent claims 1, 9 and 17 is respectfully traversed. Referring to Section 706.02 (j) of the MPEP, to establish a *prima facie* case of obviousness, three basic criteria must be met:

(1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine reference teachings;
(2) There must be reasonable expectation of success;
(3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Appellant's disclosure. See In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (F.E.D. Cir. 1991).

Independent claim 1 has been amended to include the subject matter of claim 2 (now cancelled). As amended, independent claim 1 describes a method for concurrently processing digital video frames and high resolution still images in burst mode. The method comprises: acquiring regular size video frames and high resolution still image frames in burst mode from one or more image sensors; downsampling the regular size video frames into reduced size video frames, wherein the reduced size frames have frame sizes smaller than the regular size video frames; processing the high resolution still image frames acquired during the burst mode using a high resolution still image pipeline; processing the reduced size video frames using a video pipeline, wherein the high resolution still image frames are processed concurrently with the reduced size video frames; and **upsampling the reduced size video frames using motion estimation and information from the high resolution still image frames.**

Independent claim 9 has been amended to include the subject matter of claim 10 (now cancelled). As amended, independent claim 9 describes a joint video and still image pipeline for a video camera system. The joint video and still image pipeline comprises one or more image sensors capable of concurrently acquiring regular size video frames and high resolution still image frames in burst mode, wherein the regular size video frames are downsampled into reduced size video frames, wherein the reduced size frames have frame sizes smaller than the regular size video frames; a sensor controller capable of storing the regular size video frames and

the high resolution still image frames acquired during the burst mode into a memory; and one or more processors capable of concurrently processing the reduced size video frames and the high resolution still image frames acquired during the burst mode, wherein the reduced size video frames are processed using a video pipeline, and the high resolution still image frames are processed using a high resolution still image pipeline, wherein the high resolution still image frames are processed concurrently with the reduced size video frames, and wherein **the reduced size video frames are upsampled using motion estimation and information from the high resolution still image frames.**

Independent claim 17 has been amended to include the subject matter of claim 18 (now cancelled). As amended, independent claim 17 describes a computer readable medium providing instructions for concurrently processing digital video frames and high resolution still images in burst mode. The instructions comprise: acquiring regular size video frames and high resolution still image frames in burst mode from one or more image sensors; downsampling the regular size video frames into reduced size video frames, wherein the reduced size frames have frame sizes smaller than the regular size video frames; processing the high resolution still image frames acquired during the burst mode using a high resolution still image pipeline; processing the reduced size video frames using a video pipeline, wherein the high resolution still image frames are processed concurrently with the reduced size video frames; and **upsampling the reduced size video frames using motion estimation and information from the high resolution still image frames**.

The Applicant respectfully submits that Wyman, Voss et al., and Ueno et al., either alone or in combination, fail to teach or suggest all the claim elements. Specifically, the references fail to teach or suggest *at least* the claim elements: "upsampling the reduced size video frames using motion estimation and information from the high resolution still image frames" (amended claim 1); "wherein the reduced size video frames are upsampled using motion estimation and information from the high resolution still image frames" (amended claim 9); and "upsampling the reduced size video frames using motion estimation and information from the high resolution still image frames" (amended claim 17).

The Office Action explicitly acknowledges that Wyman fails to disclose upsampling the reduced video frames using motion estimation and information from the high resolution still image frames. (See Office Action, para. 2, page 3, item (c)).

Voss et al. does not remedy the above-noted deficiency of Wyman. In particular, Voss et al. makes no teaching or suggestion regarding upsampling the reduced video frames using motion estimation and information from the high resolution still image frames. The Office Action as much as acknowledges this position, as Voss et al. is cited as teaching concurrent processing of video frames and still image frames (item (a) in para. 2 of the Office Action), but is not cited as teaching either downsampling regular size video frames into reduced size video frames (item (b) in para. 2 of the Office Action), nor upsampling the reduced video frames using motion estimation and information from the high resolution still image frames (item (b) in para. 2 of the Office Action).

Ueno et al. also fails to remedy the above-noted deficiencies of Wyman and Voss et al. In particular, Ueno et al. relates solely to a motion picture (i.e., video) coding apparatus. There is no teaching, suggestion or discussion that the apparatus of Ueno et al. includes or is useful with high resolution still image frames. Accordingly, Ueno et al. cannot be said to teach or suggest **upsampling the reduced size video frames using motion estimation *and information from the high resolution still image frames.*** As best, Ueno et al. suggests the idea of upsampling video frames using motion estimation. However, because there is no discussion relating to high resolution still images, Ueno et al. cannot be said to suggest *upsampling video frames using information from high resolution still image frames.*

For at least these reasons, Wyman, Ross et al., and Ueno et al., alone or in combination, fail to teach or suggest all the claim limitations, and therefore fail to establish a *prima facie* case of obviousness. Accordingly, the rejection of amended independent claims 1, 9 and 17 under 35 U.S.C. §103(a) should be withdrawn.

Claims 3, 4, 6, 8, 11, 12, 14, 15, 19 and 20 each depend, directly or indirectly, from one of amended independent claims 1, 9, or 17. For at least the reasons discussed above, independent claims 1, 9, and 17 are in allowable condition. Thus, dependent claims 3, 4, 6, 8,

11, 12, 14, 15, 19 and 20 are also in allowable condition by reason of their dependency from claims 1, 9, and 17. Accordingly, withdrawal of the rejection of claims 3, 4, 6, 8, 11, 12, 14, 15, 19 and 20 under 35 U.S.C. §103(a) should be withdrawn.

Claims 5 and 13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wyman, Voss et al., and Ueno et al. as applied above to claims 1-4, 6, 8-12, 14, 15, and 17-20, and further in view of Adolph et al. (U.S. Patent No. 6,081,295).

Each of claims 5 and 13 depend, directly or indirectly, from one of independent claims 1 or 9. For at least the reasons discussed above, independent claims 1 and 9 are not made obvious by Wyman, Voss et al., and Ueno et al., either alone or in combination, and are in allowable condition. Thus, dependent claims 5 and 13 are also in allowable condition by reason of their dependency from claims 1 and 9. Accordingly, withdrawal of the rejection of claims 5 and 13 under 35 U.S.C. §103(a) should be withdrawn.

Claims 7 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wyman, Voss et al., and Ueno et al. as applied above to claims 1-4, 6, 8-12, 14, 15, and 17-20, and further in view of Bittner et al. (U.S. Patent No. 6,330,400).

Each of claims 7 and 16 depend, directly or indirectly, from one of independent claims 1 or 9. For at least the reasons discussed above, independent claims 1 and 9 are not made obvious by Wyman, Voss et al., and Ueno et al., either alone or in combination, and are in allowable condition. Thus, dependent claims 7 and 16 are also in allowable condition by reason of their dependency from claims 1 and 9. Accordingly, withdrawal of the rejection of claims 7 and 16 under 35 U.S.C. §103(a) should be withdrawn.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1, 3-9, 11-17, 19 and 20 are in form for allowance and are not taught or suggested by the cited references.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 08-2025.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either Susan E. Heminger at Telephone No. (650) 236-2738, Facsimile No. (650) 852-8063 or Matthew B. McNutt at Telephone No. (512) 231-0531 Facsimile No. (512) 231-0540. In addition, all correspondence should continue to be directed to the following address:

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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 28th day of July, 2005.

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